

```

Lys Val Leu Lys Thr Thr Gln Ser Gly Phe Glu Gly Phe Ile Lys Asp
      165                      170                      175

Gln Phe Thr Thr Leu Pro Glu Val Lys Asp Arg Cys Phe Ala Thr Gln
      180                      185                      190

Val Tyr Cys Lys Trp Arg Tyr His Gln Gly Arg Asp Val Asp Phe Glu
      195                      200                      205

Ala Thr Trp Asp Thr Val Arg Ser Ile Val Leu Gln Lys Phe Ala Gly
      210                      215                      220

Pro Tyr Asp Lys Gly Glu Tyr Ser Pro Ser Val Gln Lys Thr Leu Tyr
      225                      230                      235                      240

Asp Ile Gln Val Leu Thr Leu Gly Gln Val Pro Glu Ile Glu Asp Met
      245                      250                      255

Glu Ile Ser Leu Pro Asn Ile His Tyr Leu Asn Ile Asp Met Ser Lys
      260                      265                      270

Met Gly Leu Ile Asn Lys Glu Glu Val Leu Leu Pro Leu Asp Asn Pro
      275                      280                      285

Tyr Gly Arg Ile Thr Gly Thr Val Lys Arg Lys Leu Thr Ser Arg Leu
      290                      295                      300

```

&lt;210&gt; 8

&lt;211&gt; 298

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence:PBC amino truncated

&lt;400&gt; 8

```

Asp Tyr Lys Lys Asn Asp Glu Val Glu Phe Val Arg Thr Gly Tyr Gly
  1              5              10              15

```

```

Lys Asp Met Ile Lys Val Leu His Ile Gln Arg Asp Gly Lys Tyr His
      20              25              30

```

```

Ser Ile Lys Glu Val Ala Thr Ser Val Gln Leu Thr Leu Ser Ser Lys
      35              40              45

```

```

Lys Asp Tyr Leu His Gly Asp Asn Ser Asp Val Ile Pro Thr Asp Thr
      50              55              60

```

```

Ile Lys Asn Thr Val Asn Val Leu Ala Lys Phe Lys Gly Ile Lys Ser
      65              70              75              80

```

```

Ile Glu Thr Phe Ala Val Thr Ile Cys Glu His Phe Leu Ser Ser Phe
      85              90              95

```

```

Lys His Val Ile Arg Ala Gln Val Tyr Val Glu Glu Val Pro Trp Lys
      100             105             110

```

```

Arg Phe Glu Lys Asn Gly Val Lys His Val His Ala Phe Ile Tyr Thr

```

| 115  | 120 | 125 |
|--|-----|-----|
| Pro Thr Gly Thr His Phe Cys Glu Val Glu Gln Ile Arg Asn Gly Pro<br>130 135 140     |     |     |
| Pro Val Ile His Ser Gly Ile Lys Asp Leu Lys Val Leu Lys Thr Thr<br>145 150 155 160 |     |     |
| Gln Ser Gly Phe Glu Gly Phe Ile Lys Asp Gln Phe Thr Thr Leu Pro<br>165 170 175     |     |     |
| Glu Val Lys Asp Arg Cys Phe Ala Thr Gln Val Tyr Cys Lys Trp Arg<br>180 185 190     |     |     |
| Tyr His Gln Gly Arg Asp Val Asp Phe Glu Ala Thr Trp Asp Thr Val<br>195 200 205     |     |     |
| Arg Ser Ile Val Leu Gln Lys Phe Ala Gly Pro Tyr Asp Lys Gly Glu<br>210 215 220     |     |     |
| Tyr Ser Pro Ser Val Gln Lys Thr Leu Tyr Asp Ile Gln Val Leu Ser<br>225 230 235 240 |     |     |
| Leu Ser Arg Val Pro Glu Ile Glu Asp Met Glu Ile Ser Leu Pro Asn<br>245 250 255     |     |     |
| Ile His Tyr Phe Asn Ile Asp Met Ser Lys Met Gly Leu Ile Asn Lys<br>260 265 270     |     |     |
| Glu Glu Val Leu Leu Pro Leu Asp Asn Pro Tyr Gly Lys Ile Thr Gly<br>275 280 285     |     |     |
| Thr Val Lys Arg Lys Leu Ser Ser Arg Leu<br>290 295                                 |     |     |

&lt;210&gt; 9

&lt;211&gt; 301

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence:PBC carboxy truncated

&lt;400&gt; 9

|  |
|--|
| Met Ala His Tyr Arg Asn Asp Tyr Lys Lys Asn Asp Glu Val Glu Phe<br>1 5 10 15   |
| Val Arg Thr Gly Tyr Gly Lys Asp Met Ile Lys Val Leu His Ile Gln<br>20 25 30    |
| Arg Asp Gly Lys Tyr His Ser Ile Lys Glu Val Ala Thr Ser Val Gln<br>35 40 45    |
| Leu Thr Leu Ser Ser Lys Lys Asp Tyr Leu His Gly Asp Asn Ser Asp<br>50 55 60    |
| Val Ile Pro Thr Asp Thr Ile Lys Asn Thr Val Asn Val Leu Ala Lys<br>65 70 75 80 |
| Phe Lys Gly Ile Lys Ser Ile Glu Thr Phe Ala Val Thr Ile Cys Glu                |

| 85         |            |            |            |            |            |            |            | 90         |            |            |            | 95         |            |            |            |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| His        | Phe        | Leu        | Ser<br>100 | Ser        | Phe        | Lys        | His        | Val<br>105 | Ile        | Arg        | Ala        | Gln        | Val<br>110 | Tyr        | Val        |
| Glu        | Glu        | Val<br>115 | Pro        | Trp        | Lys        | Arg        | Phe<br>120 | Glu        | Lys        | Asn        | Gly        | Val<br>125 | Lys        | His        | Val        |
| His        | Ala<br>130 | Phe        | Ile        | Tyr        | Thr        | Pro<br>135 | Thr        | Gly        | Thr        | His        | Phe<br>140 | Cys        | Glu        | Val        | Glu        |
| Gln<br>145 | Ile        | Arg        | Asn        | Gly        | Pro<br>150 | Pro        | Val        | Ile        | His        | Ser<br>155 | Gly        | Ile        | Lys        | Asp        | Leu<br>160 |
| Lys        | Val        | Leu        | Lys        | Thr<br>165 | Thr        | Gln        | Ser        | Gly        | Phe<br>170 | Glu        | Gly        | Phe        | Ile        | Lys<br>175 | Asp        |
| Gln        | Phe        | Thr        | Thr<br>180 | Leu        | Pro        | Glu        | Val        | Lys<br>185 | Asp        | Arg        | Cys        | Phe        | Ala<br>190 | Thr        | Gln        |
| Val        | Tyr        | Cys<br>195 | Lys        | Trp        | Arg        | Tyr        | His<br>200 | Gln        | Gly        | Arg        | Asp<br>205 | Val        | Asp        | Phe        | Glu        |
| Ala        | Thr<br>210 | Trp        | Asp        | Thr        | Val        | Arg<br>215 | Ser        | Ile        | Val        | Leu        | Gln<br>220 | Lys        | Phe        | Ala        | Gly        |
| Pro<br>225 | Tyr        | Asp        | Lys        | Gly        | Glu<br>230 | Tyr        | Ser        | Pro        | Ser<br>235 | Val        | Gln        | Lys        | Thr        | Leu        | Tyr<br>240 |
| Asp        | Ile        | Gln        | Val        | Leu<br>245 | Ser        | Leu        | Ser        | Arg        | Val<br>250 | Pro        | Glu        | Ile        | Glu        | Asp<br>255 | Met        |
| Glu        | Ile        | Ser        | Leu<br>260 | Pro        | Asn        | Ile        | His<br>265 | Tyr        | Phe        | Asn        | Ile        | Asp<br>270 | Met        | Ser        | Lys        |
| Met        | Gly        | Leu<br>275 | Ile        | Asn        | Lys        | Glu        | Glu<br>280 | Val        | Leu        | Leu        | Pro        | Leu<br>285 | Asp        | Asn        | Pro        |
| Tyr        | Gly<br>290 | Lys        | Ile        | Thr        | Gly        | Thr<br>295 | Val        | Lys        | Arg        | Lys        | Leu<br>300 | Ser        |            |            |            |

<210> 10

<211> 298

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:PKS carboxy truncated

<400> 10

Asp Tyr Lys Lys Asn Asp Glu Val Glu Phe Val Arg Thr Gly Tyr Gly  
1 5 10 15

Lys Asp Met Ile Lys Val Leu His Ile Gln Arg Asp Gly Lys Tyr His  
20 25 30

Ser Ile Lys Glu Val Ala Thr Ser Val Gln Leu Thr Leu Ser Ser Lys  
35 40 45

Lys Asp Tyr Leu His Gly Asp Asn Ser Asp Val Ile Pro Thr Asp Thr